

When the SWTE contract was first negotiated and let, it was decided that NPIC would furnish the targets for the device. Those chosen were [redacted] targets whose maximum frequency was 1040 lines/mm.

Hence this was written in the specifications for optimum performance fee. Subsequently, it was found that the targets would not suffice, and funds were allotted to ~~44~~ [redacted] to make targets with a maximum frequency of 1000 lines/mm. ~~But~~ But the specs were not changed. To realistically apply the criteria, it must be understood that the 1000 lines/mm achievement constitutes the optimum performance, and the fee corresponding to the 1040 figure should be ~~allotted~~ allotted accordingly. STATINTL

The specification dealing with accuracy was also in error, since no precise definition was appended. Consideration has subsequently been given to this, and decided that the reasonable specification of performance would be the spread of readings or computed points for the MTF curve; this is described by the standard deviation, or variance. The acceptance tests show a standard deviation below five percent, the figure for the maximum fee. It is therefore recommended that that fee be awarded.

Declass Review by NIMA/DOD

6539. TEST DATA.

FIRST OBJECTIVE: WILD 10x N.A. 0.25.

DATE: 3/23/67.

PIN HOLE: 8 mm NOMINAL
8.00 mm MEASURED.

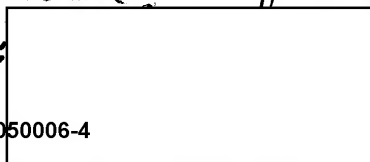
LIMITING RESOLUTION: TARGET 2-9 RESOLVED
TARGET 2-10 NOT RESOLVED.

TARGET	FILTER	2°OBJ	ZOOM	OBSERVER	NOTES. Average & No/4	STATINTL
2-3	15-5	60	1.18	96 114 96	98 106 105	102.5/25.6
2-4	15-5	60		92 101 100	104 102 104	100.5/25.1
2-5	15-5	60	1.88	113 120 120	118 120 119	118.3/29.6
2-6	15-5	20	1.18	114 112 143	126 125 120	118.3/29.6
2-7	15-5	20	1.47	142 143 142	142 148 155	145.3/36.3
2-8	15-5	20		216 202 202	211 215 194	Image very fuzzy. 206.7/51.7

ZERO CORRECTION: MAX CONTRAST AT 0 DEGREES.

ROOM LIGHTS: 1 desk lamp shining at the wall.

Witnessed by:



STATINTL

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SHIPPING MEMO

23rd March 67
SHIPPING DATE

TO

CUSTOMER'S ORDER NO.

DL PROJECT NO.

6727(6239)

QUANTITY AND DESCRIPTION

3. Eyepiece filters (3)
4. Microscope with special eyepiece adapter
5. Microscope holder
6. Eyepiece 10x and 20x

ATTENTION OF

SHIP VIA

SPECIAL INSTRUCTIONS

STATINTL

PROJ.
MGR.

3-23-67

ENG.
ADMIN.

3/23/67

ACCTS.

STATINTL

SHIPMENT WAS MADE AS FOLLOWS

DATE SHIPPED

V I A

WAYBILL/AIR BILL NO.

RECEIPT NO.

CHARGES

WEIGHT

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700050006-4

SHEET 2 of 3

STATINTL

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700050006-4

SHIPPING MEMO

23rd MARCH 67
SHIPPING DATE

TO

CUSTOMER'S ORDER NO.

DL PROJECT NO.

6727-(6339)

QUANTITY AND DESCRIPTION

1 Prototype sine wave test device
together with ancillary equipment
including:-

1. Variable modulation target box.
2. 2 (two) 15 bar resolution targets.

ATTENTION OF

SHIP VIA

HAND CARRY

SPECIAL INSTRUCTIONS

6/2/67 JMM

STATINTL
PROJ. MGR. 3-23-67
ENG. ADMIN. 3/23/67
ACCTG.

STATINTL

SHIPMENT WAS MADE AS FOLLOWS

DATE SHIPPED	V I A	WAYBILL/AIR BILL NO.	RECEIPT NO.	CHARGES	WEIGHT
	Approved For Release 2002/06/17 : CIA-RDP78B04747A000700050006-4				

SHEET 2 OF 3

STATINTL

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SHIPPING MEMO

23rd March 67
SHIPPING DATE

TO

CUSTOMER'S ORDER NO.

DL PROJECT NO.

6727(6539)

QUANTITY AND DESCRIPTION

7. Objectives 10x, 20x, & 40x
8. Power supply for target box.

ATTENTION OF

SHIP VIA

SPECIAL INSTRUCTIONS

3/23/67

WKS

STATINTL

PROJ.
MGR.

3-23-67

ENG.
ADMIN.

3-23-67

ACCTG

STATINTL

SHIPMENT WAS MADE AS FOLLOWS

DATE SHIPPED

V I A

WAYBILL/AIR BILL NO.

RECEIPT NO.

CHARGES

WEI

RE

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700050006-4

MEMORANDUM FOR: [REDACTED]

STATINTL

Here is the file of papers. I've written a few melodious sentences necessary for the inspection report, etc.

[REDACTED] now has the equipment. He will have [REDACTED] construct the necessary pieces to adapt it to the Beck Bench. He will be in [REDACTED] this next week, and will therefore not be able to work on the SWTE until the 3rd of April. By that time the manual should be here. Rots of Ruck.

Rich S.

20 March 1967

(DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

(47)

STATINTL
25X1

STATINTL

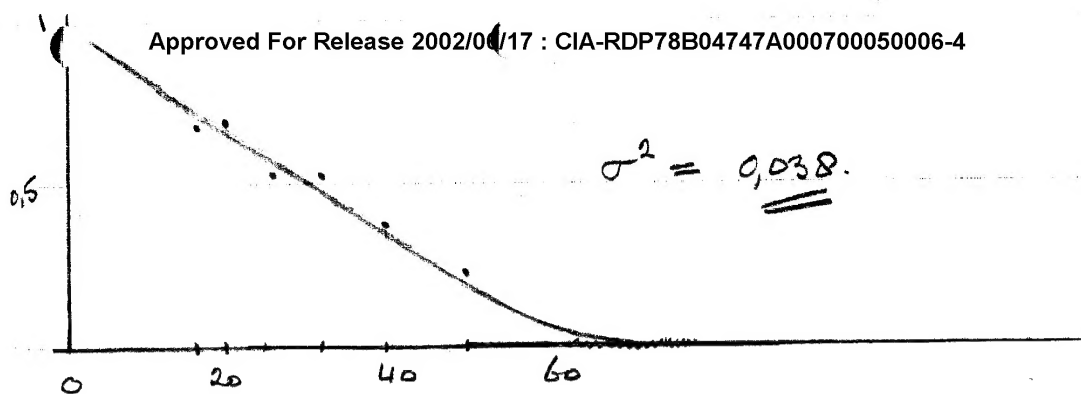
length	V	φ_{av}	$\sin^2 \varphi$	V	1/V	$\tau = \frac{0.127}{V}$
2-3	15.85	25.6	.188	.188	5.31	.68
2-4	19.96	25.1	.180	.180	5.55	.70
2-5	25.12	29.6	.244	.243	4.11	.52
2-6	31.63	29.6	.244	.243	4.11	.52
2-7	39.82	36.3	.350	.347	2.88	.365
2-8	50.14	51.7	.616	.604	1.66	.210

$$V = 1.010 \sin^3 \varphi - 9.049 \sin^4 \varphi$$

STATINTL



3/23/69



STATINTL



23 March 1967

T02509*

2*

0*

1

15.85 1 5.31

1

19.96 1 5.55

1

25.12 1 4.11

1

31.63 1 4.11

1

39.82 1 2.88

1

50.14 1 1.66

0

T07261*

100

-1.115537E-01

7.3301811E+00

1.0383280E+02

5.3851801E-01

STATINTL

$$\frac{1}{V_{ben}} = 17.3302 - 0.1116 \nu$$

$$= 17.7568 (9945 - \frac{\nu}{75.2} 1.082)$$

$$\therefore V_{film} = 0.129$$

STATINTL



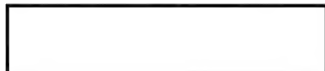
22-863/22-864 HIGH RESOLUTION TEST TARGETS

This target contains three groups of fifteen-bar high contrast targets.

The spatial frequency ratio between successive targets is $10^{\sqrt{10}}$. The target of highest spatial frequency in each group is repeated as the target of lowest spatial frequency in the next group, making a total of 31 distinct target frequencies. The maximum variation in width between light and dark bars is less than 5 per cent over the 1 to 300 cycles/mm range. The density difference is greater than 2.0. The spatial frequencies in each group in cycles per millimeter are as follows:

<u>GROUP I</u>	<u>GROUP II</u>	<u>GROUP III</u>
1.00	10.00	100.0
1.26	12.59	125.9
1.58	15.85	158.5
2.00	19.96	199.6
2.51	25.12	251.2
3.16	31.63	316.3
3.98	39.82	398.2
5.01	50.14	501.4
6.31	63.13	631.3
7.95	79.48	794.8
10.00	100.00	1000.0

STATINTL

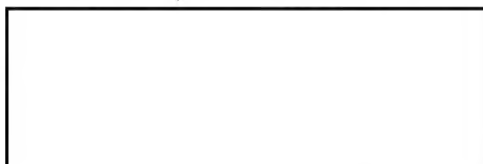


5. The clause entitled "DELIVERY:" is amended, in part, to include the following:

1. Two (2) copies of all reports required under this contract shall be forwarded direct to the Contracting Officer.

2. Three (3) copies of all reports required under this contract shall be forwarded to the Technical Representative of the Contracting Officer at the following address:

STATINTL



STATINTL

6. The clause entitled "CONTRACT COST:" is amended to read:



7. The clause entitled "CONTRACT FEE:" is amended to read:

The fee for performance of this Contract shall be determined by application of performance and cost incentives as follows:

→ 1. Resolution:

Spatial frequency capability of the instrument will be evaluated on three levels of performance:

- a. 228 1/mm (minimum acceptable)
- b. 600 1/mm
- c. 1040 1/mm

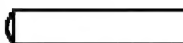


STATINTL

No Government Equipment will be furnished as targets.

2. Accuracy of Modulation Transfer Function Measurement:

The accuracy and precision of the equipment shall be demonstrated by the following procedure:

A microscope objective of high quality ( or equal) is to be placed in a finite fixture having an adjustable aperture stop. This stop shall be circular

25X1

STATINTL

[REDACTED]

and shall be adjusted to allow the lens to operate in a diffraction-limited mode. The diffraction limit shall be a lower frequency than the highest frequency on the testing target. The fixture shall also permit longitudinal focal shifts of 0, 1/4, 1/2, 3/4, and 1 wave of defocussing.

The sine-wave testing device shall be used to measure the transfer function of the lens under these conditions of focal shift. Measurements shall be made for at least two different aperture stops. Comparison of measured and calculated transfer curves shall fall within:

- a. ten (10) per cent (Target).
→ b. five (5) per cent (Incentive Goal).
For achieving Incentive Goal fee to be increased by [REDACTED]

STATINTL

All other terms and conditions of the said contract shall be and remain the same.

Please indicate your acceptance of the foregoing by signing this letter and the enclosed two copies thereof. Retain one copy for your records and return the signed original and remaining one copy to the undersigned at the earliest practicable date.

Very truly yours,

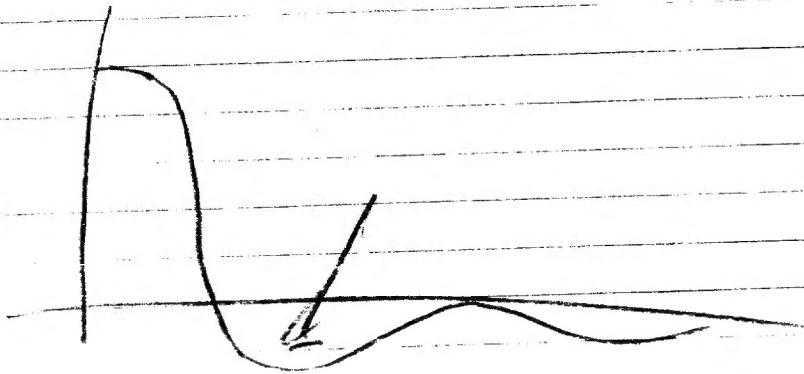
STATINTL

[REDACTED]
Successor Contracting Officer

ACKNOWLEDGED AND ACCEPTED
THIS _____ DAY OF _____ 1966.

DIFFRACTION LIMITED, INC.

BY _____
TITLE _____



2. (attention to page 2)

Demonstration of D/K performance

of a OR position where
control is adjusted to approx

a 800 g/min

b 600 "

c 400 "

d 200 "

6-10 points

↑

a) Do all curves & plot

b) We will ask you to reproduce
graph then, at different cut-off points